1.2367/X38CRMOV5-3

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NAZWA GATUNKU: 1.2367/X38CRMOV5-3

NAZWA: TOOL STEEL / DIE STEEL

NORM: ISO 4957

APPLICATION

Steel susceptible to large die casting tools, tools needing high strength at elevated temperatures, forged dies, products under a high load, mandrels and extrusion dies.

CHEMICAL COMPOSITION:

C	Si	Mn	P	S	Cr	Mo	W	V	Co	Ni
0,35-0,40	0,30-0,50	0,30-0,50	Max 0,030	Max 0,030	4,80-5,20	2,70-3,20	–	0,40-0,60	–	–

MECHANICAL PROPERTIES:

Hardness after	Temperature ºC	Symbol	Value
Soft annealing	–	HB	≤229
Quenching with 1040 ºC in oil	–	HRC	56
Quenching with 1040 ºC in oil and tempering (cooling during quenching can be performed gradually in the hot bath at around 500-550 ºC and then cooled in the air)	550	HRC	≥50
	350	HRC	52
	400	HRC	53
	450	HRC	53.5
	500	HRC	54
	550	HRC	54
	600	HRC	51.5
	650	HRC	4.,5

PHYSICAL PROPERTIES:

Property	Unit	Value
Density, ρ	$g*cm^{-3}$	7.82
Thermal expansion, $\alpha_{20\text{-}100^{\circ}C)}$	K^{-1}	$12.7*10^{-6}$
Thermal conductivity, $\lambda_{20^{\circ}C)}$	$W*m^{-1}*K^{-1}$	36

TECHNOLOGICAL TREATMENT PROCESSES:

Technological treatment processes			Possible application	Temperature, °C
Hot forming	Forging		+	1050-850
	Rolling		+	1050-850
Treatment	Heat treatment	Quenching	+	1030-1070
		Tempering	+	500-600
	Precipitation strengthening	Supersaturation	–	–
		Ageing	–	–
	Annealing	Soft anealing	+	800-840
		Stress relieving	+	600-700
Thermochemical treatment	Nitriding		+	470-550
	Other		–	–

INTERNATIONAL STEEL GRADES:

ISO		EN		Russia	
X38CrMoV5-3	ISO 4957:2004	X38CrMoV5-3	ISO 4957:2004	–	–
US		Japan		China	
–	–	–	–	–	–